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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,045	03/10/2004	Hironori Oikawa	ASA-1171	2727
24956	7590	05/03/2005		
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			EXAMINER WALBERG, TERESA J	
			ART UNIT 3753	PAPER NUMBER

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/796,045	OIKAWA, HIRONORI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Teresa J. Walberg	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 10/8/03. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).
2. Figures 18-21 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geva et al (6,707,676) in view of Pellant et al (4,188,996).

Geva et al (see Fig. 4) disclose a fluid cooling apparatus including a base (130) bonded to a heating element (126), a post standing perpendicularly to the base, a plurality of radiating fins (125a-n) attached to the post (124) and

arranged to be parallel to the base (130), a case (129a, b) adjacent the post to provide an inlet and outlet for coolant (Fig. 4), the post being columnar and the radiating fins being concentric with the post. Geva et al do not disclose a partition, the coolant being a liquid, or the case surrounding the post.

Pellant et al teaches an apparatus for cooling semiconductor elements including a liquid coolant (see title) in a closed housing (1) having a partition (8). It would have been obvious in view of Pellant et al to use to use a liquid coolant in the cooling apparatus of Geva et al in view of the teaching of Pellant et al the liquid coolants can remove more heat than gaseous coolants, and to use a partition and a closed housing to guide the coolant in a desired flow path and to keep the liquid coolant from leaking.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geva et al (6,707,676) in view of Pellant et al (4,188,996) as applied to claims 1-4 above and further in view of Thomas (6,167,948).

Geva et al in view of Pellant et al disclose a fluid cooling apparatus having the claimed structure with the exception of an air-cooled heat sink attached to the top face of the case.

Thomas teaches (see Fig. 12) an apparatus for cooling semiconductor elements (28) including an air-cooled heat sink (116, 118) attached to the top face of the case (110). It would have been obvious in view of Thomas to use an air-cooled heat sink attached to the top face of the case in the cooling apparatus

of Geva et al in view of Pellant et al in order to increase the cooling capacity of the apparatus.

6. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geva et al (6,707,676) in view of Pellant et al (4,188,996) as applied to claims 1-4 above and further in view of Uead et al (2001/0018967).

Geva et al in view of Pellant et al disclose a fluid cooling apparatus having the claimed structure with the exception of the center post being a heat pipe.

Uead et al teaches (see Fig. 9) a cooling apparatus including an air-cooled fins (5) attached to a central post (H), the central post (H) being a heat pipe (see para 0039). It would have been obvious in view of Uead et al to use a heat pipe as the central post in the cooling apparatus of Geva et al in view of Pellant et al in order to increase the cooling capacity of the apparatus.

7. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geva et al (6,707,676) in view of Pellant et al (4,188,996) and Thomas (6,167,948) as applied to claims 5 and 6 above and further in view of Uead et al (2001/0018967).

Geva et al in view of Pellant et al and Thomas disclose a fluid cooling apparatus having the claimed structure with the exception of the center post being a heat pipe.

Uead et al teaches (see Fig. 9) a cooling apparatus including an air-cooled fins (5) attached to a central post (H), the central post (H) being a heat pipe (see

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para 0039). It would have been obvious in view of Uead et al to use a heat pipe as the central post in the cooling apparatus of Geva et al in view of Pellant et al and Thomas in order to increase the cooling capacity of the apparatus.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Friedman, Ban et al, and Doll are cited to show liquid circuit cooling devices.

Dussinger et al, Guerrero, Tantoush, and Sarraf are cited to show heat transfer posts surrounded by cooling fins.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw